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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,085	08/19/2003	Ricardo San Martin	LOPEZ-4	3063

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EXAMINER	
WILKINS III, HARRY D	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/643,085	SAN MARTIN ET AL.	
	Examiner	Art Unit	
	Harry D. Wilkins, III	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status

1. Applicant's arguments with respect to the expectation of success of using the Molina tree extract are considered persuasive.

2. However, new grounds of rejection are presented below utilizing newly found references.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by "El quillay controla los tóxicos" with evidence from Nord et al (for claims 3 and 7 only).

"El quillay controla los tóxicos" is a newspaper article from the newspaper *El Mercurio* from Chile. The article is a disclosure, apparently by Applicant (note "San Martin" (first named inventor) appears in the last paragraph), which discloses the use of extracts of the "tree of quillay" (i.e.-*Quillaja saponaria*). Particularly of note is that saponinas (saponins) are explicitly stated as being resistant to conditions in the copper electrowinning solutions.

The publication date of this article is the 14th of December 2001, which is more than a year prior to the date of application for patent in the United States (19th of August

2003). Therefore, the news article represents a statutory bar to the granting of a patent on this subject matter.

Regarding claim 2, the article explicitly states that the extract included saponins.

Regarding claims 3 and 7, the article fails to teach the structure of the saponins present in the abstract. However, Nord et al teach (see pages 199-200) that the extract from the bark of the *Quillaja saponaria* Molina tree included a heterogenous mixture of triterpenoid-based saponins, having a triterpenic core (see figure1) with sugar chains (R^1 and R^2) at the 3 and 28 positions. Therefore, the extract disclosed by the article is considered to inherently posses the claimed composition/structure. The structure of claim 7 is identical to the structure disclosed by Nord et al in figure 1, with a few exceptions. R^1 of Nord et al corresponds to the trisaccharide present at the left hand side of the structure. However, Nord et al teach (see caption of figure 1) that R^1 could be a branched trisaccharide. R^4 of claim 7, corresponds to R^4 of Nord et al. $R^{4'}$ of claim 7 corresponds to R^3 of Nord et al. The R^2 structure of Nord et al, an oligosaccharide, corresponds to the structure of the molecule below the "X" on the lower right portion of the structure in claim 7.

Regarding claims 5 and 6, the saponin extract of this articles is considered to inherently possess the same properties since it had the same composition.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bultman et al (US 4,484,990) in view of Niwase (JP 09-227345) with support from Nord et al (for claims 3 and 7 only) and MacKinnon et al.

Bultman et al teach (see abstract) a method for inhibiting acid misting in copper electrowinning comprising adding a surfactant to the electrolyte from which copper is electrowon. The surfactant acts to create a foam thereby preventing the bubbles formed at the anode from forming a mist which caused a hazardous work environment.

Bultman et al fail to teach that the surfactant added was a soluble surfactant comprising an extract from the *Quillaja saponaria* Molina tree.

However, Niwase teaches (see English abstract) that extracts from the *Quillaja saponaria* Molina tree had excellent surfactant properties.

Therefore, it would have been obvious to one of ordinary skill in the art to have used the surfactant extract from the *Quillaja saponaria* Molina tree as suggested by Niwase in the copper electrowinning electrolyte of Bultman et al because Niwase teaches that the extracts had excellent surfactant properties.

Niwase fails to teach using a refined extract. However, as the pure extract of the tree would have contained a number of other ingredients, it would have been obvious to one of ordinary skill in the art to have refined the extract to remove unnecessary components and to have concentrated the saponin glycosides.

Additionally, MacKinnon et al teach (see page 955) that Saponins were known to be useful as surfactants for reducing acid misting in zinc electrowinning. Zinc

electrowinning utilized similar conditions as copper electrowinning, particularly sulfuric acid concentration. Therefore, one of ordinary skill in the art would have had a reasonable expectation of successfully applying the saponin surfactant of Niwase to the copper electrowinning process of Bultman et al.

Regarding claim 2, Niwase teaches (see English abstract) that the extract was composed of a triterpenoid-based saponin.

Regarding claim 3, Niwase fails to teach that structure of the triterpenoid-based saponin. However, Nord et al teach (see pages 199-200) that the extract from the bark of the *Quillaja saponaria* Molina tree included a heterogenous mixture of triterpenoid-based saponins, having a triterpenic core (see figure1) with sugar chains (R^1 and R^2) at the 3 and 28 positions. Therefore, the extract taught by Niwase is considered to inherently posses the claimed composition/structure.

Regarding claims 4-6, Bultman et al teach (see col. 9, lines 45-58) using surfactant concentrations of 1-200 ppm. MacKinnon et al teach (see pages 956-957 and figure 1) using Saponin concentration of 20-40 mg/L (approximately 20-40 ppm since one liter of water weighs about 1 kg). Therefore, it would have been obvious to one of ordinary skill in the art to have used similar concentrations with the surfactant of Niwase. The surfactant is considered to inherently possess the same properties since it had the same composition and would have been used in the same concentration range.

Regarding claim 7, the structure of claim 7 is identical to the structure disclosed by Nord et al in figure 1, with a few exceptions. R^1 of Nord et al corresponds to the trisaccharide present at the left hand side of the structure. However, Nord et al teach

(see caption of figure 1) that R^1 could be a branched trisaccharide. R^4 of claim 7, corresponds to R^4 of Nord et al. $R^{4'}$ of claim 7 corresponds to R^3 of Nord et al. The R^2 structure of Nord et al, an oligosaccharide, corresponds to the structure of the molecule below the "X" on the lower right portion of the structure in claim 7.

Response to Arguments

7. Applicant's arguments filed 6 March 2006 have been fully considered but they are not persuasive. Applicant has argued that there is no motivation to combine the teachings of Bultman et al of electrowinning with the teachings of Niwase with respect to teaching a surfactant because Niwase fails to disclose electrowinning.

In response, the Examiner is not persuaded. The prior art is replete with examples of surfactants that are used in both shampoos and to improve electrowinning characteristics. Similar to the fluoroaliphatic surfactant of Bultman et al, Pavlik et al disclose using fluoroaliphatic surfactants in shampoos. Young et al teach using guar as a surfactant in a copper electrowinning process and Bolich, Jr et al teach using guar as a surfactant in a shampoo. In addition to these examples, evidence that one of ordinary skill in the art would have had a reasonable expectation of successfully using the saponin extract in a copper electrowinning process is shown above in the rejection grounds. However, since these references are merely added as evidence showing the reasonable expectation of success, and the rejection grounds of Bultman et al in view of Niwase would stand alone without them, they do not constitute new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry D Wilkins, III
Primary Examiner
Art Unit 1742

hdw